user guide
MapSight

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MS-102-16-04-5.0

Introduction

MapSight™ is a location-based measuring solution that will greatly increase your productivity when undertaking utility asset management surveys and related measurements.

With your MapSight solution you can quickly:
- Collect geo-located pole photos
- Measure wire span heights, even across busy roads
- Determine wires clearances from vegetation or buildings
- Make accurate attachment height measurements on captured photos

This document will guide you through:
- Setting up your MapSight system
- Making in-field measurements tasks
- Transferring data from the MapSight device to your PC
- Measuring attachment heights from a photo
- Outputting data in industry standard file formats

What's in the Box

- MapSight device with on-board measuring tools
  - Target Position, 3-Shot Height, Missing Line, Span Height, Tree Assessment, Local Point
  - Photo Only
  - TrueSize photos (if purchased)
- MapSight desktop for
  - data management, custom forms, report generation
  - photo measurements (if TrueSize photos are purchased)
- Accessories
  - USB Cable, International Charger, 2 Batteries, 8GB SDHC Card, Screen Protector
  - Hardcase, Softcase, Travel Charger, Vehicle Charger, Glare Shield
  - Low-Magnetic Signature Tripod
- Documentation
  - MapSight Fieldcraft Guide
  - MapSight User Guide
- 1-year Hardware Warranty, Software Maintenance & Support

WARNING!	**Text set off in this manner indicates that failure to follow directions could result in user injury or unexpected data results.**
IMPORTANT:	Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.
Note:	*Text set off in this manner indicates information that may be useful to the operation of your MapSight device.*

MapSight System Overview

Setup System Download and install the software from the MapSight website onto your PC.

Configure MapSight Use the sample forms (located in the MapSight desktop 'Sample Forms' folder) or create your own, and deploy these to your MapSight device.

Capture Data Measure objects in the field with your MapSight device.

Download Use MapSight desktop to download the files from the MapSight device to your PC.

Measure photos in MapSight desktop

- Measure attachments from a MapSight photo.
- Regenerate reports to review your results.

View Report Data
Create and view report data in MapSight desktop.

System Setup

IMPORTANT: The following software and documentation are required to use your MapSight. They are available as downloads from www.gemapsight.com/support.

MapSight Software

MapSight desktop

MapSight desktop makes file transfer from your MapSight device simple. Customise and deploy forms directly to your MapSight device and generate various file types from captured data. Make accurate pole measurements from photos and save marked-up photos.

MapSight tools

The on-board measuring tools for your MapSight. Your device has been shipped with the latest factory software - your installed version shows on the MapSight device main screen. However the team at MapSight are regularly making product improvements. To get the latest software releases with new tools, features and enhancements, regularly visit the www.gemapsight.com/support page.

MapSight Documentation

MapSight User Manual

The most comprehensive A-Z guide to using your MapSight device.

MapSight Fieldcraft Guide

How to get the best results from your MapSight, tips and tricks to improve performance, accuracy, and productivity

Additional Software

Microsoft ActiveSync or Mobile Device Center

Programs necessary for connection to the PC. Some systems will already have these preloaded. If not, you will need to install one (ActiveSync for XP or Windows Mobile Device Center for Windows 8, 7 or Vista).

Google Earth

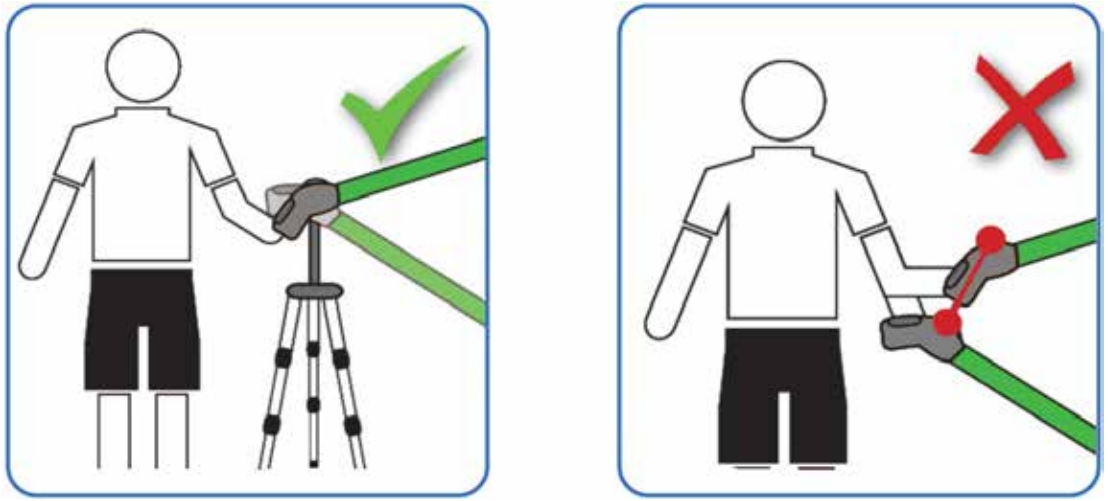
Desktop your data and measurements by clicking on their location on aerial photographs.

MapSight Tripod

We strongly recommend using a MapSight Low Magnetic Signature Tripod, which provides a stable platform so you can obtain the most accurate results. The advantages of using this tripod are:

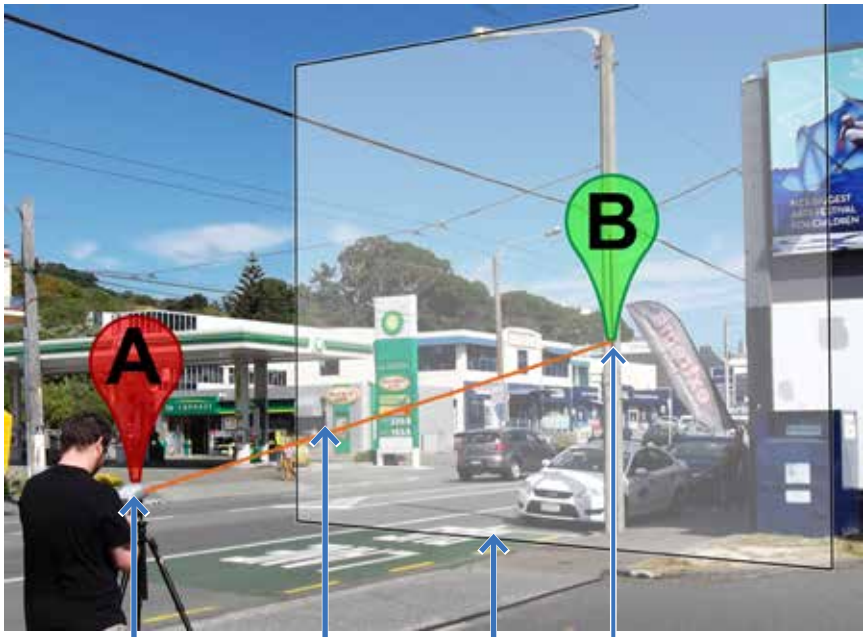
- additional stabilization is achieved, making it much easier to target poles and wires.
- movement is minimized, ensuring accurate measurements.
- the MapSight Low Magnetic Signature Tripod has no effect on the MapSight compass.

Tip: *To ensure accuracy, we recommend performing a compass calibration after air travel with your MapSight or before starting intensive measuring work. Refer to the* ***MapSight User Manual*** *for details.*



IMPORTANT: A normal tripod will introduce errors in target position and measurements.

MapSight – How it Works

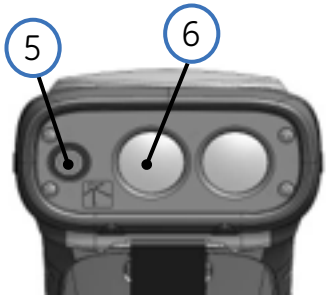


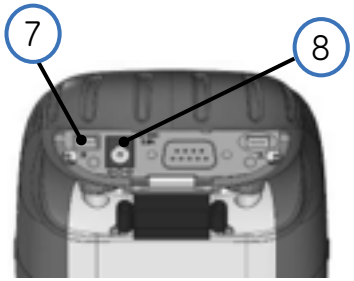
GPS location of MapSight Device

Distance to pole

Photo is taken at the same time

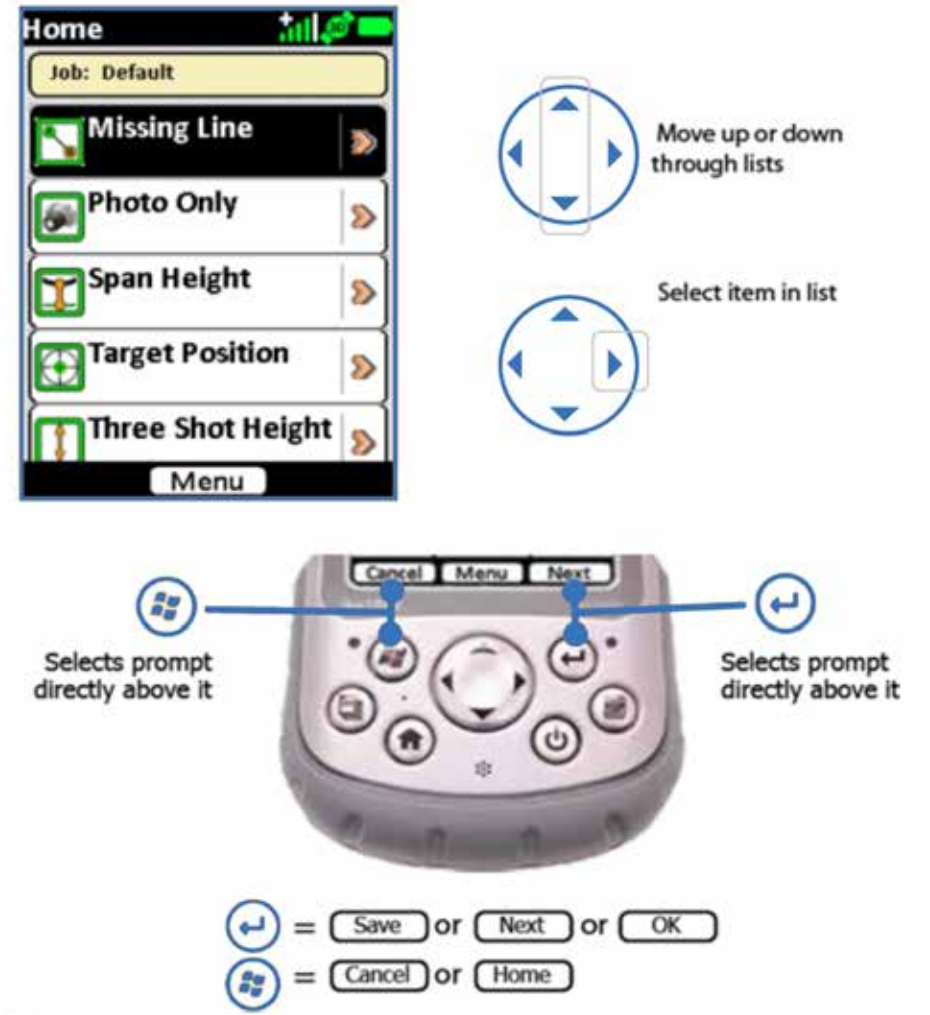
GPS location of pole





1. Touchscreen/LCD display
2. Four-way directional button
3. Enter button
4. Power button
5. Digital camera
6. Laser rangefinder
7. USB data transfer port
8. Power port

Navigating on MapSight



Sample Forms

MapSight desktop comes with a number of **Sample Forms** to get you up and running quickly and learn the basics of the system. Some of these sample forms are used in this training document as examples for the below scenarios.

Use MapSight desktop to deploy these forms to your MapSight device and get used to the MapSight workflow and then build your own forms.

Pole Audit Sample Form

- Add a Pole ID label
- Capture a full pole photo
- Add a comment

Wire Span Sample Form

- Add a wire span height
- Add an attribute: Road, Driveway, Pavement or Other.

Wire Clearance Sample Form

- Measure a wire clearance
- Add a class: wire-vegetation, wire-building or wire-wire

Field Tips

- Charge before use.
- Practice on nearby poles and assets before venturing too far.
- Use a MapSight Low Magnetic Signature Tripod (see page 5).

For further tips, see the **MapSight Fieldcraft Guide**.

Capture Data with the Pole Audit Sample Form

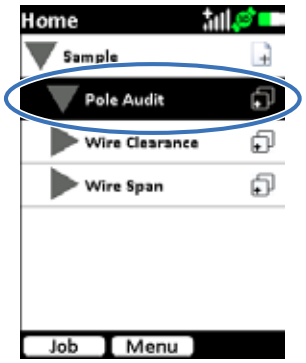
Follow these steps to capture data using the Pole Audit Sample Form.

Here you will learn how to:

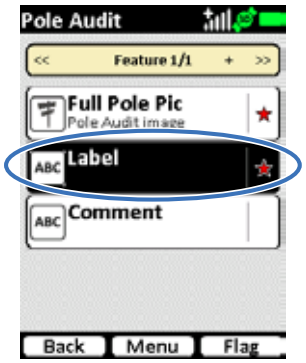
- Add a Pole ID label
- Capture a full pole photo
- Add a comment.

Tip:

Tasks can be completed in any order. Mandatory tasks are shown with a red star.



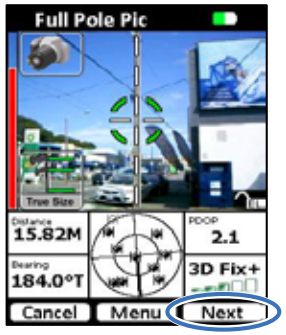
1. Tap **Pole Audit** to open this form.



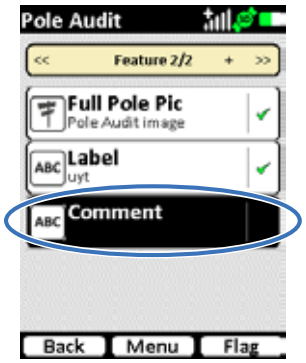
2. Tap **Label**.

3. Type in a pole ID label, then tap **OK**.

4. Tap **Full Pole Pic**.

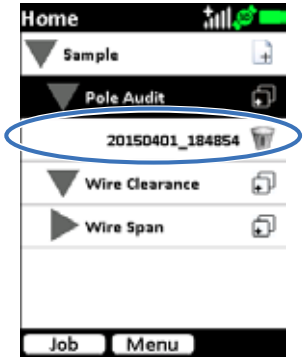


5. Aim at the pole and ensure that:
   - the crosshairs hit the pole,
   - the vertical guide is aligned,
   - the entire pole is visible in the photo.
6. Tap **Next** to capture.



7. Tap **Comment**.

8. Type in any relevant comments, e.g. pole material, type, etc., then tap **OK**.



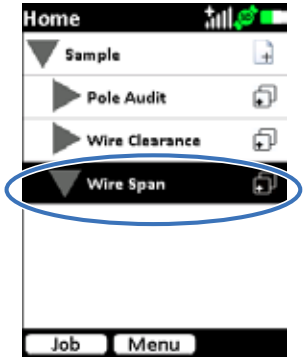
9. When all tasks have been completed, the pole item will be displayed on the screen.

Capture Data with the Wire Span Sample Form

Follow these steps to capture data using the Wire Span Sample Form.

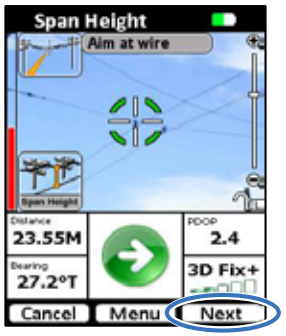
Here you will learn how to:

- Add a wire span height
- Add an attribute: Road, Driveway, Pavement or Other.



1. Tap **Wire Span** to open this form.

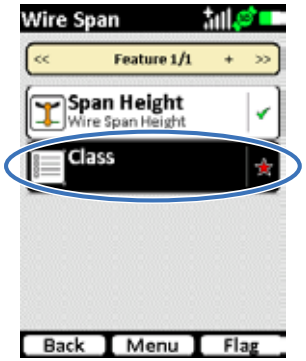
2. Tap **Span Height**.



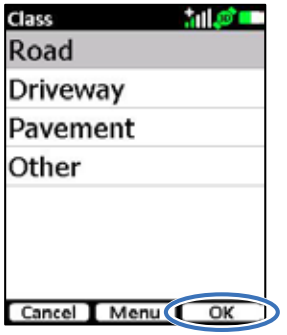
3. Aim your MapSight at a wire, wait for the crosshair guide to turn green, then tap **Next**

4. Follow the onscreen arrows to find the base point directly below the targeted wire point. Once arrows disappear, tap **Next** to capture the ground point.

5. Aim the camera so that it captures the entire overlaid measurement and tap **Next** to capture the photo.



6. Tap **Class**.



7. Select from the available options, then tap **OK**.

8. When all tasks have been completed, the wire span item will be displayed on the screen.

Capture Data with the Wire Clearance Sample Form

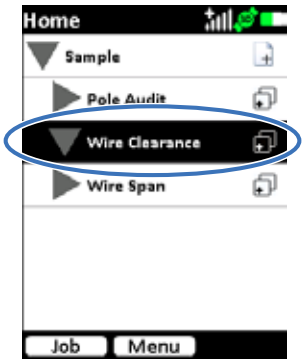
Follow these steps to capture data using the Wire Clearance Sample Form.

Here you will learn how to:

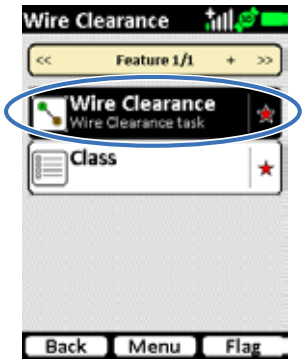
- Measure a wire clearance
- Add a class: wire-vegetation, wire-building or wire-wire.

Tip:

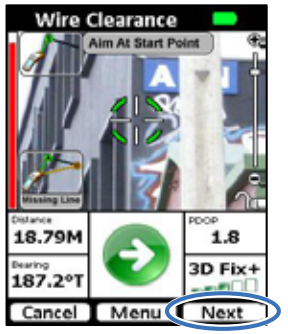
Use the green back (left) arrow to go back a step.



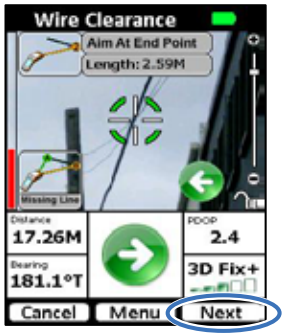
1. Tap **Wire Clearance** to open this form.



2. Tap **Wire Clearance**.



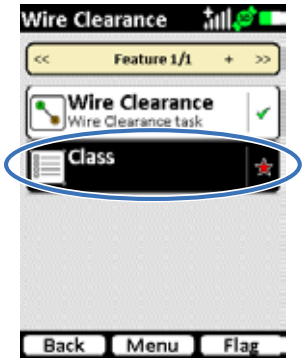
3. Set the start point by aiming at a point on a building, then tap **Next**.



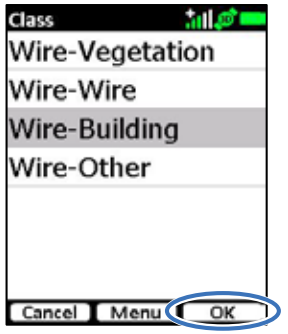
4. Aim at the desired end point on the wire, then tap **Next**.

   Tip: To find the minimum distance, observe the **Length** readout while moving the laser along the wire.

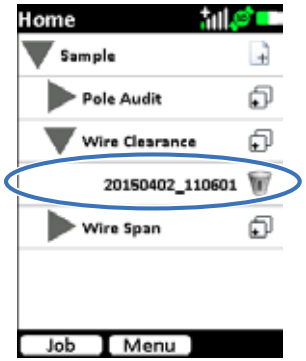
5. Aim the camera so that it captures the entire overlaid measurement, then tap **Next** to capture the photo.



6. Tap **Class**.



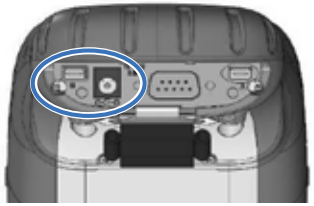
7. Select from the available wire clearance options, then tap **OK**.



8. When all tasks have been completed, the wire clearance item will be displayed on the screen.

Download Files from MapSight to PC

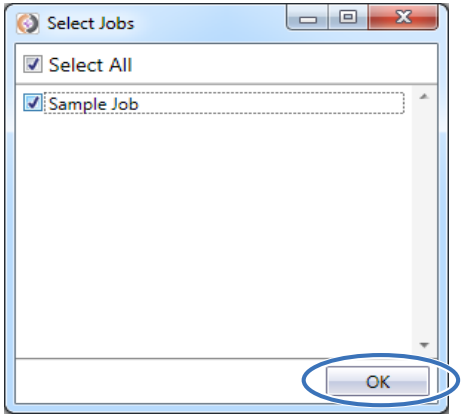
1. Plug in the USB and power cables.



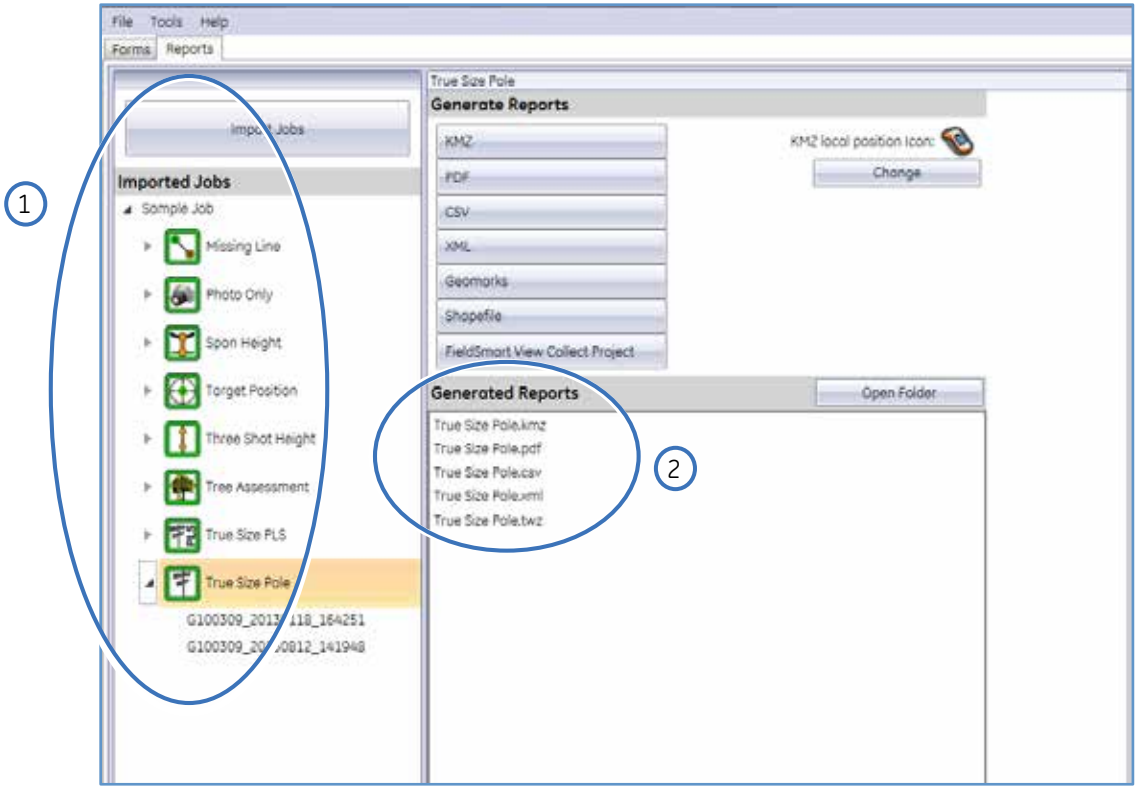
2. Wait for Windows to discover MapSight.
   - Windows should automatically find MapSight on plugging in the USB cable, however if your PC fails to find the device it may be necessary to download additional Microsoft Windows connection software – either Windows Mobile Device Center or Windows ActiveSync. See www.gemapsight.com/support.
   - If using Windows Mobile Device Center, click **Connect without setting up your device**.

3. Start MapSight desktop.
4. Click the **Reports** tab, then click **Import Job**.

5. Check the job you want to import, then click **OK**. The data will be downloaded to the folder specified in MapSight desktop Tools → Settings.



Generate Reports in MapSight desktop



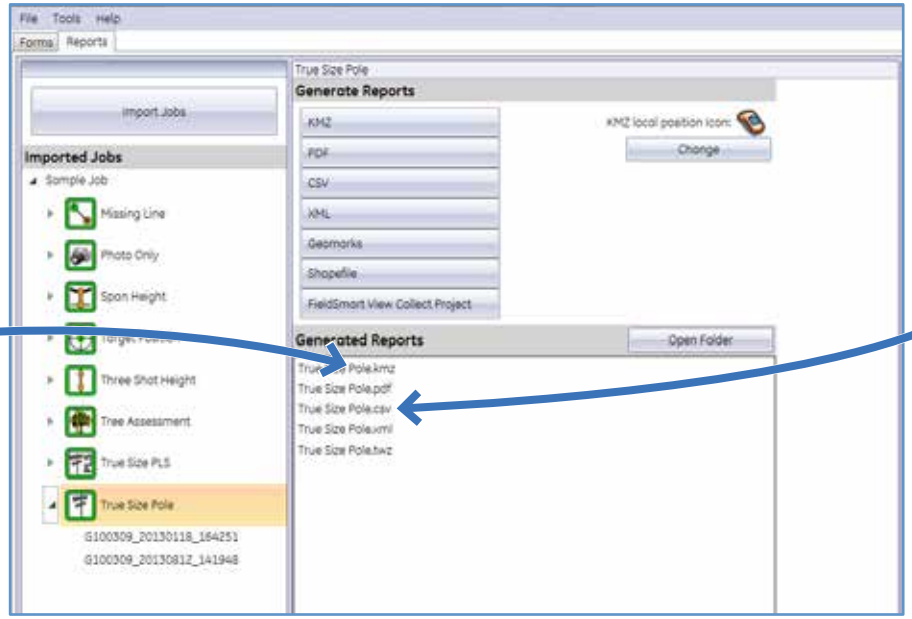
Generating Reports

1. Locate your job in the **Imported Jobs** panel.
2. Select the desired file format and click on the desired report.

MapSight desktop automatically:

- generates the folder structure for the current job within the MapSight desktop data folder.
- creates **Generated Reports** based on the configuration settings in **Tools** → **Settings** → **Reports**, or manually using the **Generate Reports** buttons.

Report Data



Google Earth (KMZ) Format

In the **Reports** tab of MapSight desktop, double-click on the **.kmz** file.

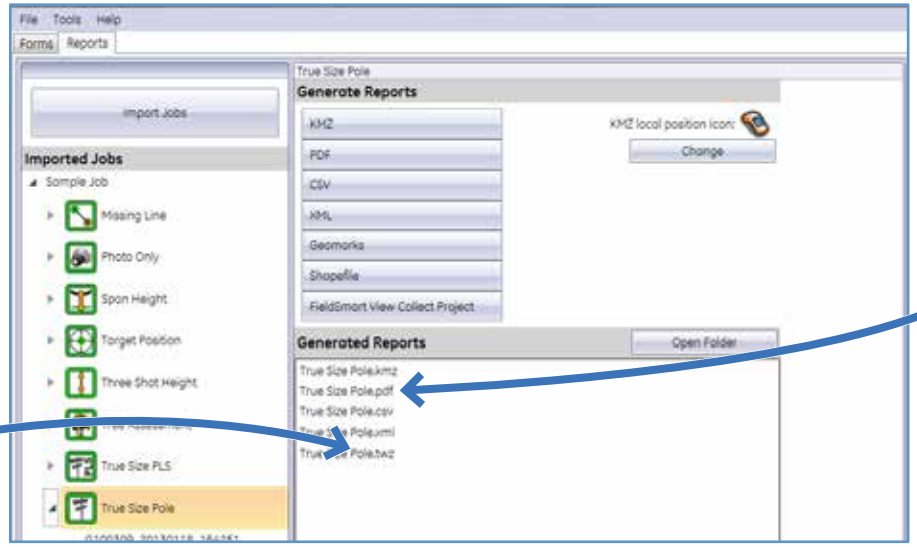
By clicking on the Pole icon in Google Earth, you can view the associated JPG photo along with other captured data.

Spreadsheet (or database import) CSV Format

Double-click the .csv file to view as a spreadsheet.

Note: *To include pole attachment data, simply regenerate the reports after performing your measurements.*

Report Data



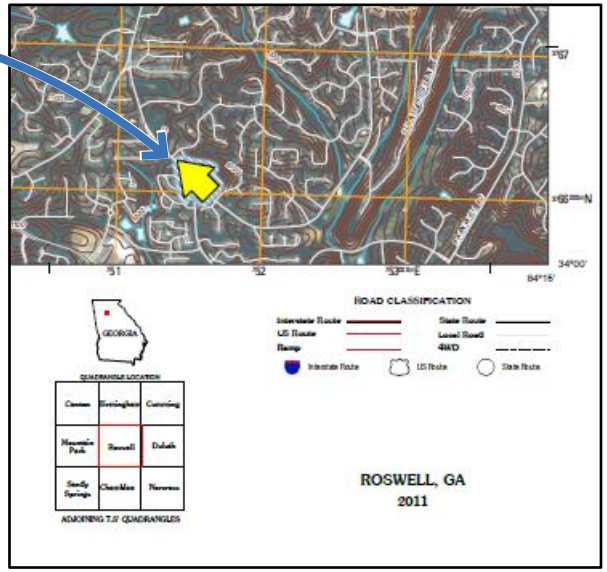
GeoPDF (TWZ) Format

Double click the .twz file to create a GeoMark for viewing in a GeoPDF.

By clicking on the arrow in the GeoPDF you can view the associated JPG photo.

Adobe PDF Format

In the **Reports** tab of MapSight desktop, double-click on the **.pdf** file.



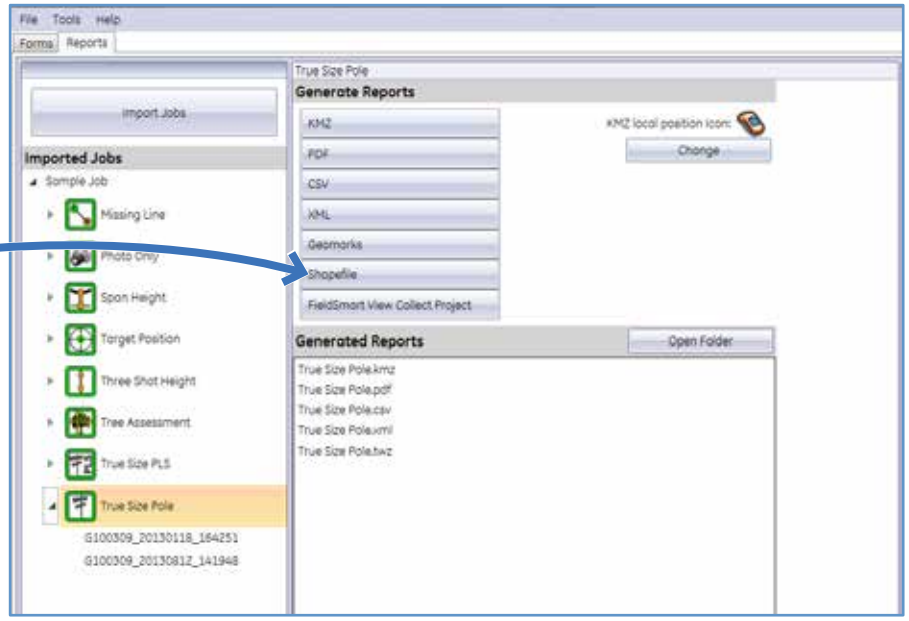
Note: *To include pole attachment data, simply regenerate the reports after performing your measurements.*

Report Data

SHP format (Shapefiles)

In the **Reports** tab of MapSight desktop, double-click on the **.shp** file.

By clicking on the icon, you can view the associated attribute information from the shapefile.



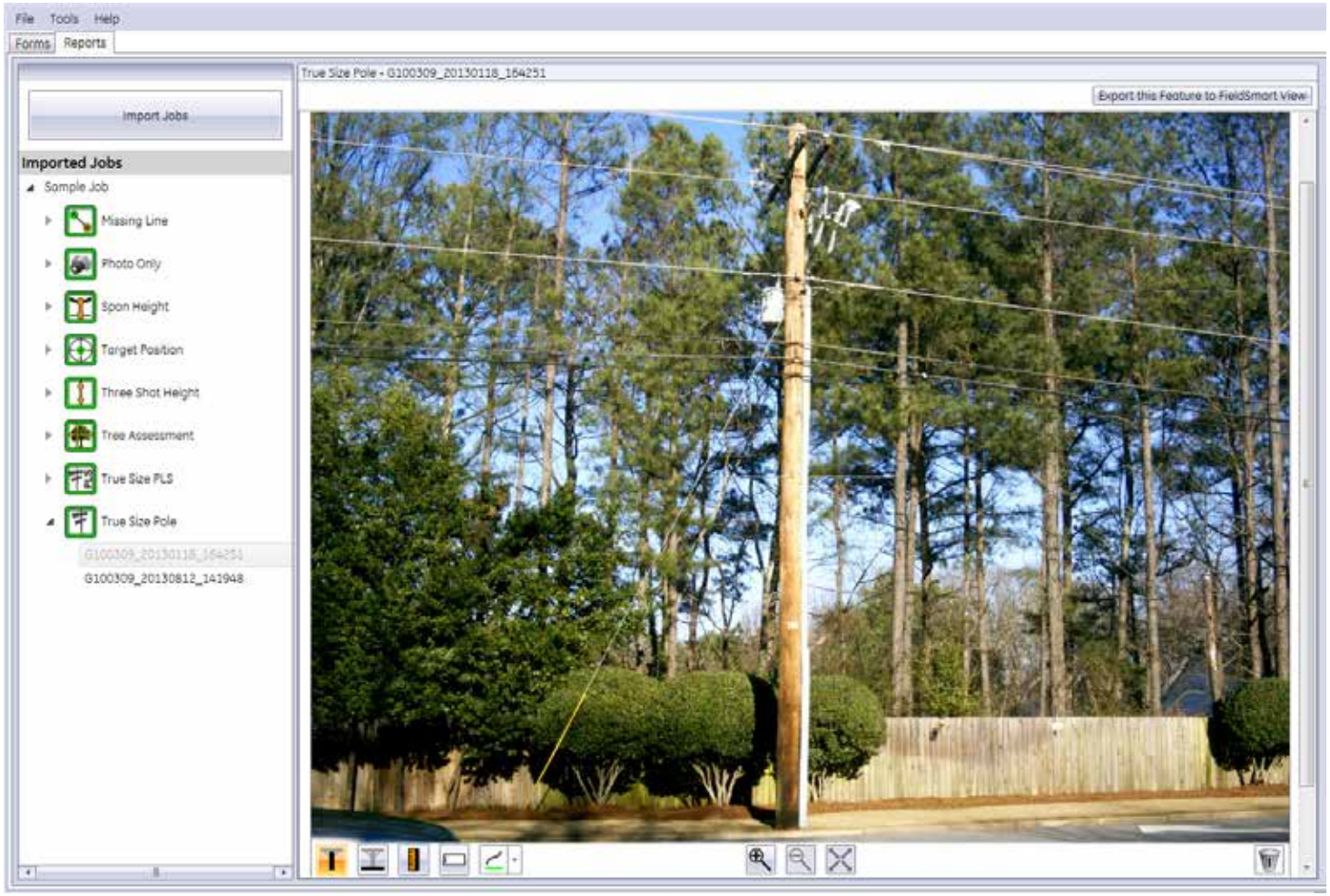
Note: *To include pole attachment data, simply regenerate the reports after performing your measurements.*

Measuring in MapSight desktop

Note: *Photo measuring capability is only available to customers with a TrueSize photo license.*

- MapSight desktop software enables you to effectively measure the heights and widths of pole attachments from your MapSight photos.
- Use the TrueSize photo included in your sample data to measure pole attachments.
- Open MapSight desktop and click on Reports → Sample Job → TrueSize Pole and click on a photo.

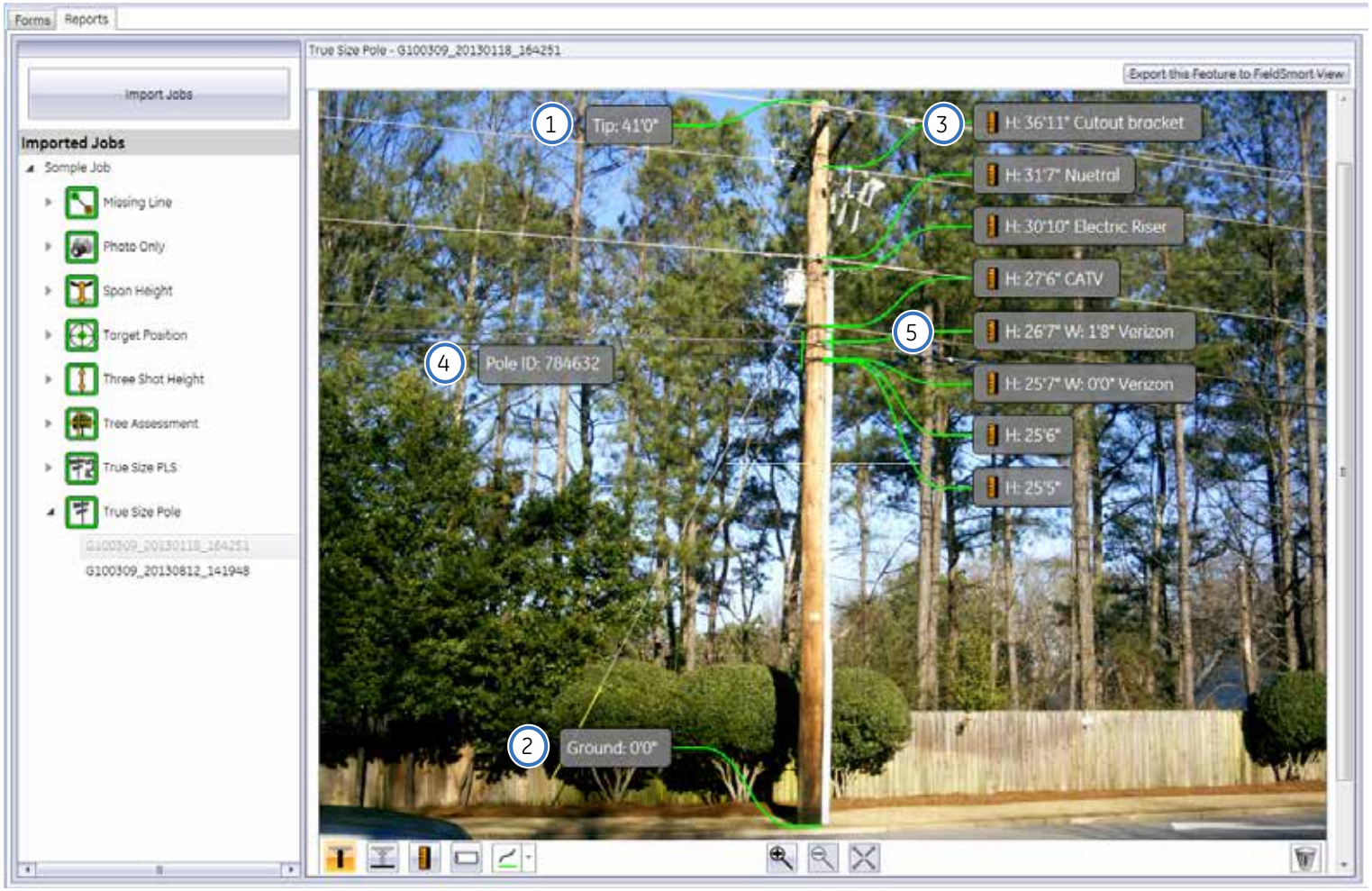
Measuring Photos in MapSight desktop



MapSight desktop Measurement Icons

1. Set the tip of the pole
2. Set the ground level
3. Measure attachment heights
4. Add labels to the photo
5. Adjust line color
6. Zoom In
7. Zoom Out
8. Desktop original extent
9. Delete all

Measuring Attachment Heights in MapSight desktop



MapSight desktop Height Measuring

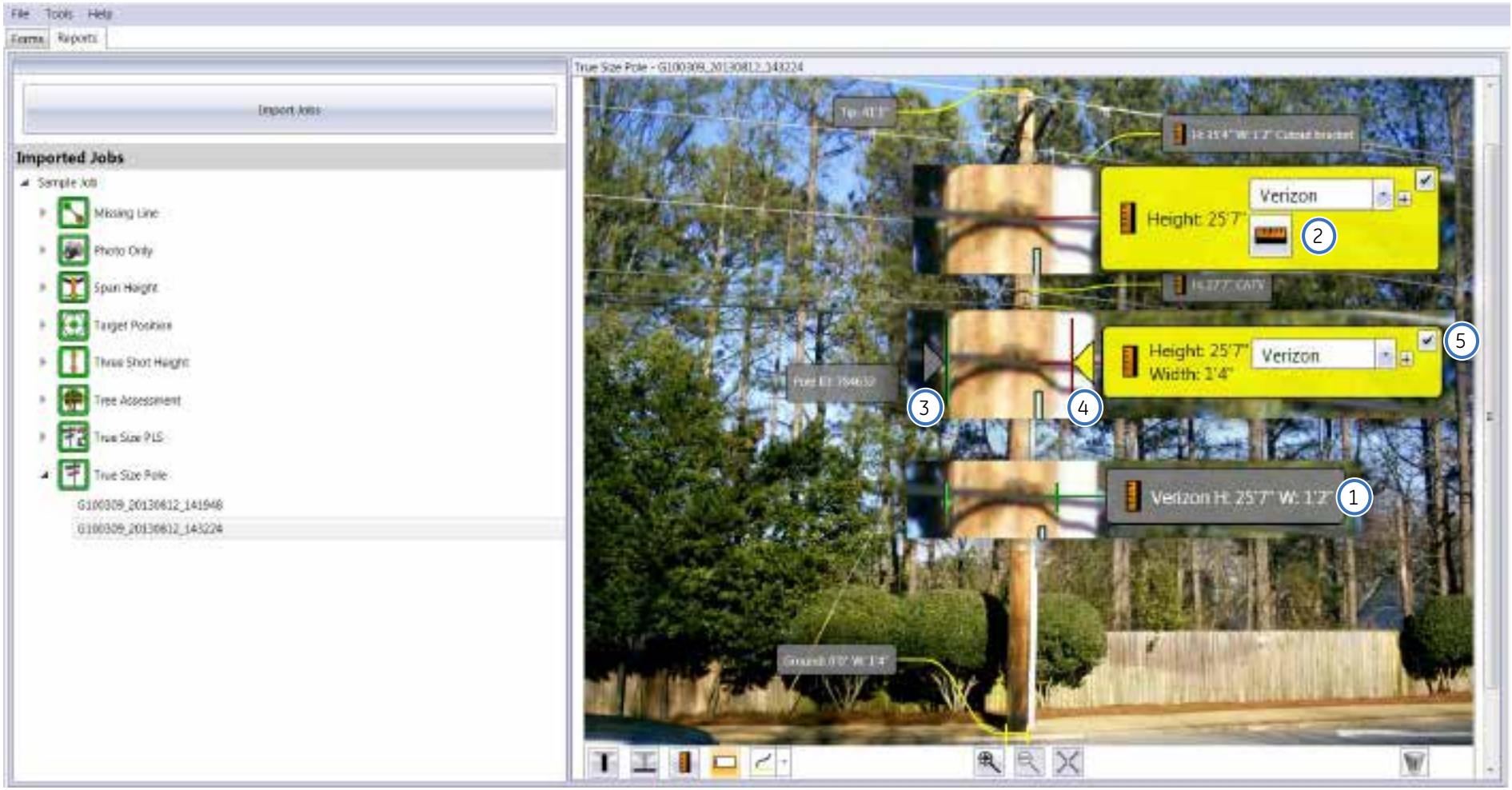
1. Set the tip of the pole.
2. Set the ground level.
3. Measure attachment heights.
4. If needed, add labels to the photo.
5. If needed, change the line color.

All markups on the photo are saved automatically.

Tips:

- Zoom in and out by holding the Ctrl key and scrolling the mouse wheel.
- Pan around the photo by holding the left mouse button down and dragging.
- To delete a single measurement, select it and then press the Delete key.

Measuring Attachment Widths in MapSight desktop



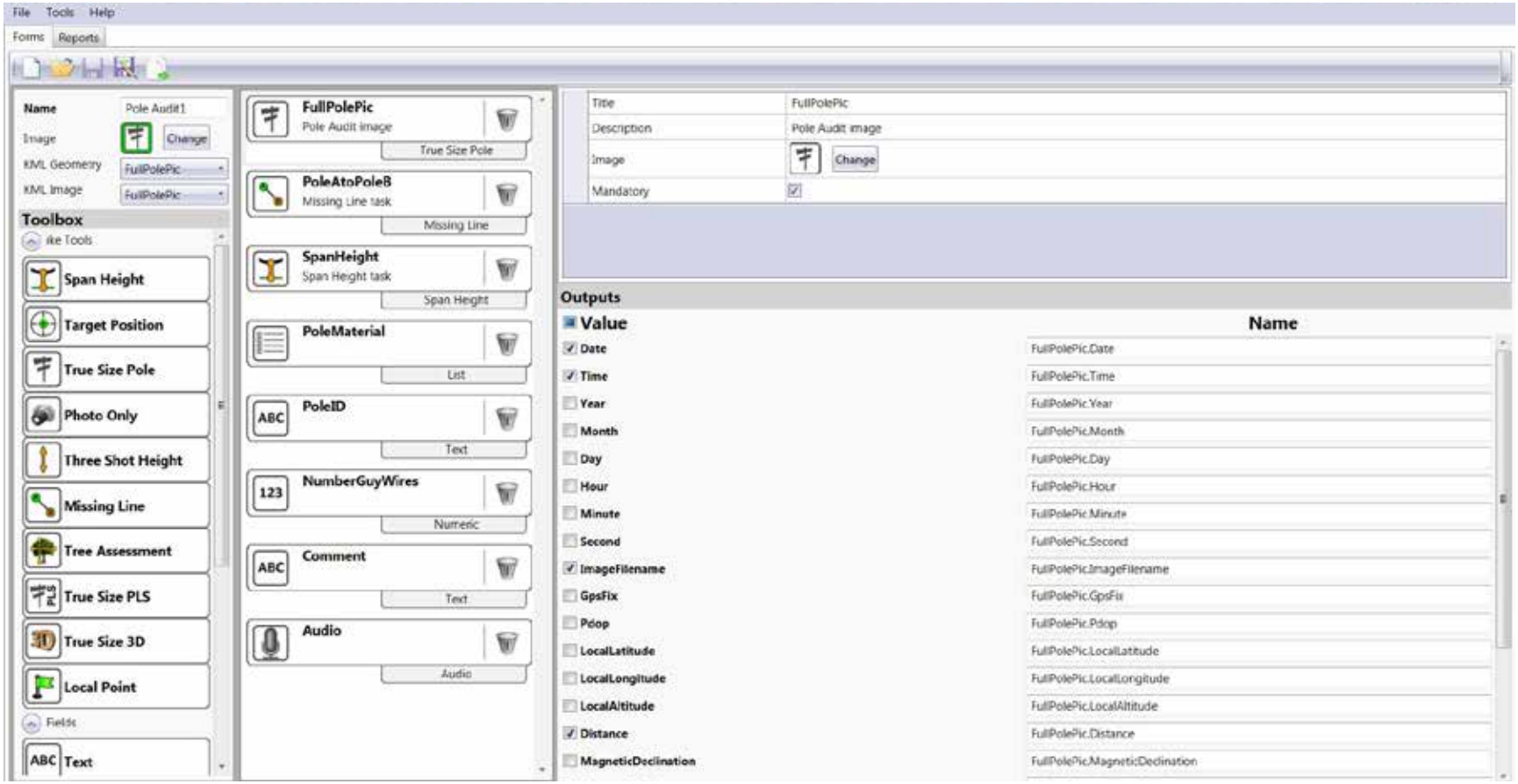
MapSight desktop Width Measuring

1. Click on an attachment height.
2. Select .
3. Click on the left side of pole. Use the arrows keys to move the calliper to the edge.
4. Click on the right side of pole. Use the arrow keys to move the calliper to the edge.
5. Click the check box.

All markups on the photo are saved automatically.

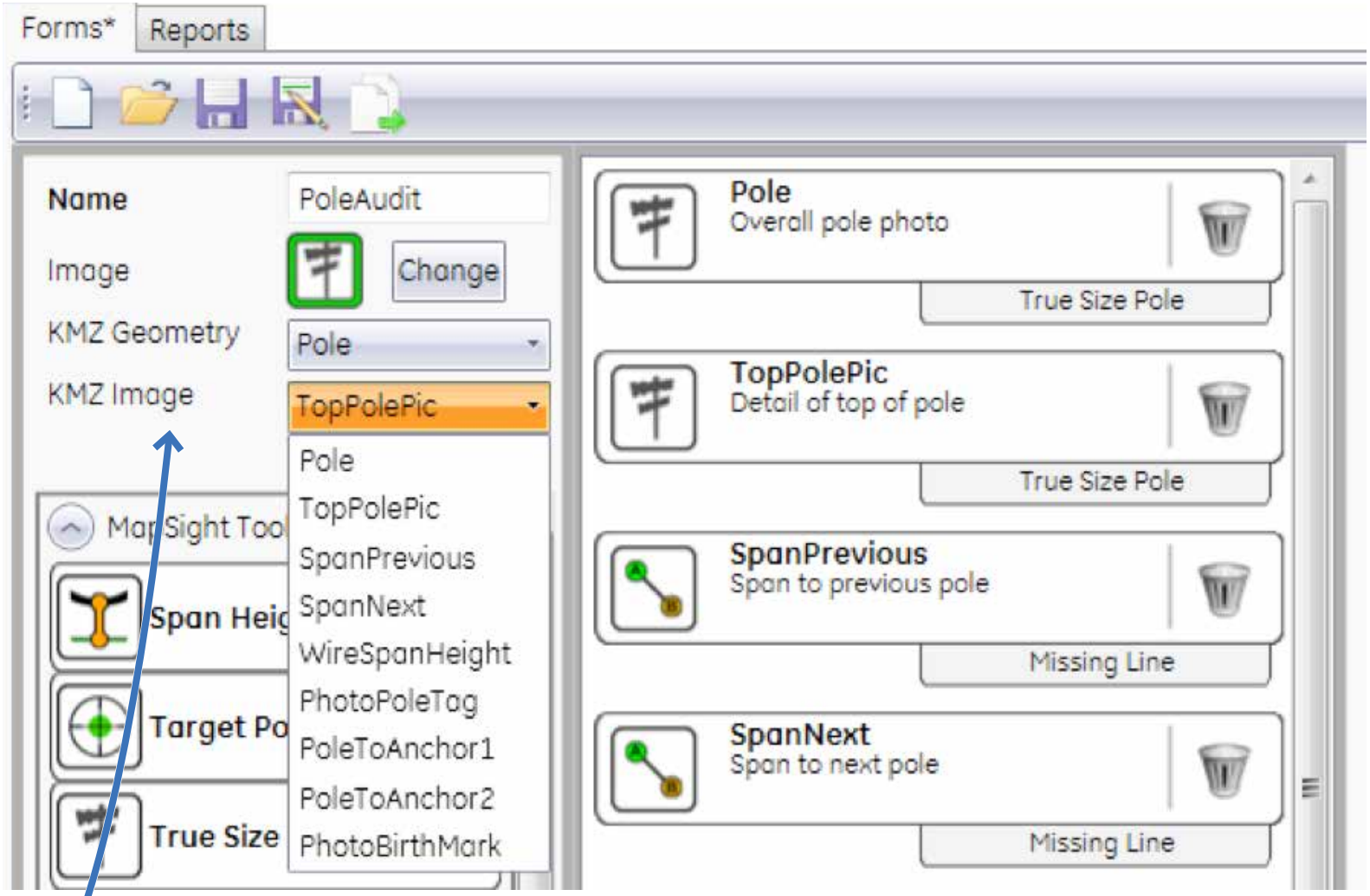
Custom Forms

By customizing your workflow using MapSight desktop, speed up and get the best results for your application.



If you have any difficulties using MapSight software or need further information, please go to www.gemapsight.com/support for assistance.

Custom Forms



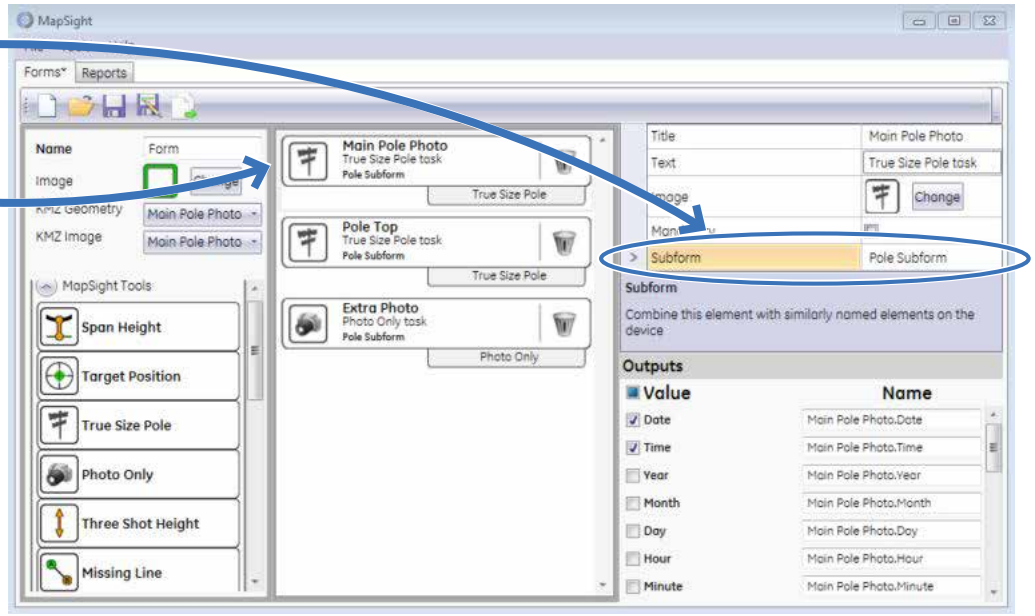
Tip:

If you have multiple measuring tools in the form, you can specify which one is to be used as the object location in a KMZ report by selecting the tool for "KMZ Geometry". By the same token, you can specify which photo is to be included in the KMZ file by selecting the tool for "KMZ Image". You can also change the icon that shows the data capture's location position on the map.

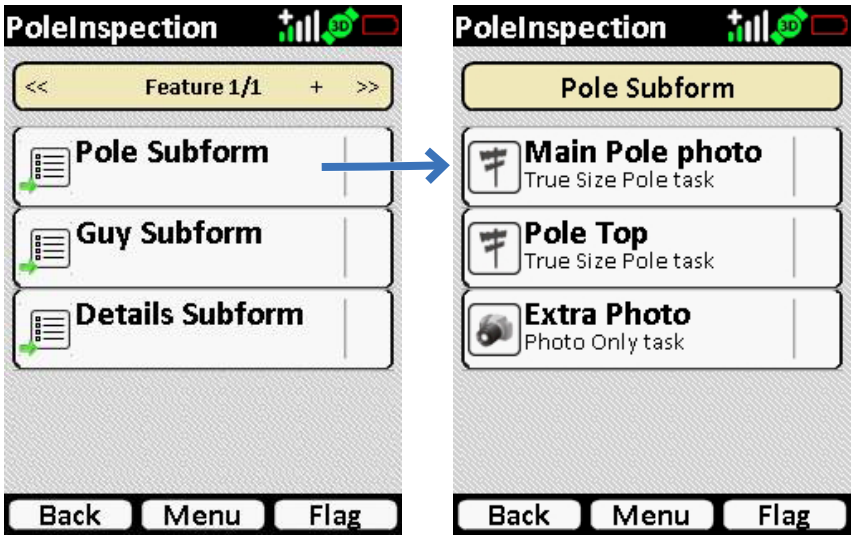
Sub Forms

All fields and tools have an free-text attribute called 'Subform'. This field is used to define the subform that the given field/tool belongs to.

The assigned Subform is also shown on the form.

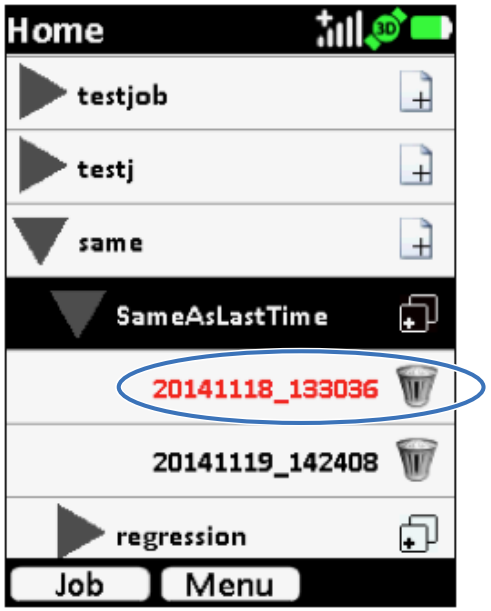


Once deployed, the subform will display on the device as shown:



Flag a Feature

This function allows a user to flag a feature that has been captured for review at a later stage. On pressing the flag button the text changes to red (see below) to indicate that the feature has been flagged.

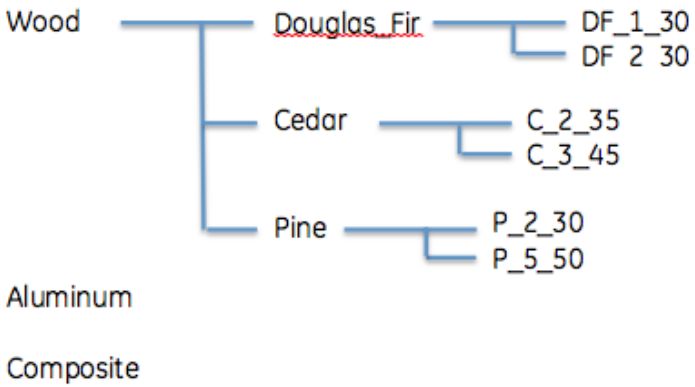


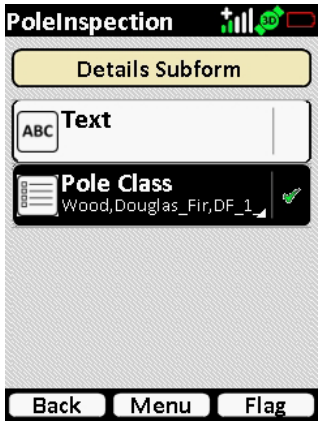
On the main menu, the feature will also be highlighted in red after it has been flagged. Tapping the flag button again 'unflags' the feature.

A typical real world scenario: if for some reason you cannot or choose not to complete capturing information for a pole, you can flag this pole as incomplete and move onto the next one. When reviewing your work via the home screen at a later point, you will see that one pole still requires more work and then resume capturing that information.

Nested List

Example: If you want to create a nested list for:





You can create nested lists by using the below syntax:

Wood__Douglas_Fir__DF_1_30,Wood__Douglas_Fir__DF_2_30, Wood__Cedar__C_2_35,Wood__Cedar__C_3_45, Wood__Pine__P_2_30, Wood__Pine__P_5_50

Note that nested levels are separated by "__" (double underscore).

The result is a nested list on the data collection form. When you select Wood, you will have the option to continue to select Douglas_Fir, Ceder or Pine. When you subsequently select Douglas_Fir, you then have the option to select DF_1_30 or DF_2_30, etc.

After completing a nested list it displays as shown: